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EXAMINER

MOORE, JAMES K

ART UNIT

PAPER NUMBER

2682

DATE MAILED: 08/15/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/287,264

Applicant(s)

AGIN ET AL.

Examiner

James K Moore

Art Unit

2682

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 May 2002.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2-18 and 21-57 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 2-18, 21 and 25-27 is/are allowed.
- 6) ☒ Claim(s) 22-24, 28-31, 33, 34 and 36-57 is/are rejected.
- 7) ☒ Claim(s) 32 and 35 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

1. **Claim 28** is objected to because of the following informalities:

In line 2, "dosed-loop" should be changed to "closed-loop". Appropriate correction is required.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. **Claims 23 and 44-57** are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The specification, as originally filed, did not disclose a method containing a step of regular estimating whether a criterion **will or will not be met** by the operation of a power control algorithm. The specification only disclosed whether a criterion **would or would not have been met** by the operation of the algorithm.

Claim Rejections - 35 USC § 102

4. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

5. **Claims 22, 24, 28-31, 34, and 38-42** are rejected under 35 U.S.C. 102(e) as being anticipated by Vembu.

Regarding **claim 22**, Vembu discloses a method for improving the performance of a mobile radiocommunication system using a power control algorithm (tracking mode algorithm), the method comprising: regularly estimating if a criterion is met (received signal-to-noise ratio is below a nominal level) as to whether the power control algorithm should better be deactivated; and deactivating the power control algorithm if the criterion is met. The de-activation of the tracking mode algorithm includes performing a different type of algorithm (burst mode algorithm). See col. 4, lines 18-57, col. 6, lines 18-67, and Figure 3.

Regarding **claim 28**, Vembu discloses everything claimed as applied to **claim 22** above, and in addition, his algorithms are chosen in a group comprising closed-loop and open-loop power control algorithms (both are closed-loop algorithms.) See col. 4, lines 18-57 and col. 6, lines 18-67.

Regarding **claim 29**, Vembu discloses everything claimed as applied to **claim 22** above, and additionally discloses that the power control method comprises: regularly estimating if the criterion is met as to whether the power control algorithm should better be deactivated, when activated, or activated, when deactivated; and deactivating, or

activating the power control algorithm if the corresponding criterion is met. See col. 4, lines 18-57, col. 6, lines 18-67, and Figure 3.

Regarding **claim 30**, Vembu discloses everything claimed as applied to **claim 22** above, and additionally discloses that the power control method includes a provision which prevents the algorithm from deactivating or activating too frequently: modification of the signal-to-noise ratio threshold to be a range of values, rather than a single value. See col. 7, lines 1-6.

Regarding **claim 31**, Vembu discloses everything claimed as applied to **claim 22** above, and additionally discloses that estimation as to whether the criterion is met is based on an estimation of a deviation value, representative of a deviation between an estimated transmission quality (signal-to-noise ratio of a received signal) and a target transmission quality (signal-to-noise threshold value). See col. 4, lines 18-57 and col. 6, lines 18-67.

Regarding **claim 34**, Vembu discloses everything claimed as applied to **claim 31** above, and additionally discloses that the estimated transmission quality is represented by a received signal power (signal-to-noise ratio). See col. 4, lines 18-57 and col. 6, lines 18-67.

Regarding **claim 38**, Vembu discloses everything claimed as applied to **claim 22** above, and additionally discloses that the power control method may be implemented in any communication system and further mentions the use of power control methods in CDMA communication systems. See col. 1, lines 36-53 and col. 3, lines 32-40.

Regarding **claims 39 and 41**, Vembu discloses everything claimed as applied to **claim 22** above, and additionally discloses a mobile radiocommunication network entity/mobile station (104A) comprising, for performing the power control method: means (112A) for performing the method, and means (108A) for sending corresponding power control commands to a mobile station/network entity (104B). See col. 4, lines 18-57 and col. 6, lines 18-67.

Regarding **claims 40 and 42**, Vembu discloses everything claimed as applied to **claim 22** above, and additionally discloses a mobile station/network entity (104B), comprising, for performing the method: means (112B) for receiving power control commands from a mobile radiocommunication network entity/mobile station (104A), according to the method. See col. 4, lines 18-57 and col. 6, lines 18-67.

Regarding **claim 24**, Vembu discloses a method for improving the performance of a mobile radiocommunication system using a power control algorithm (tracking mode algorithm), the method comprising: regularly estimating if a criterion is met (received signal-to-noise ratio is below a nominal level) as to whether the power control algorithm should better be deactivated; and deactivating the power control algorithm if the criterion is met. The estimating comprises estimating the performance of the system with the power control algorithm activated (the signal-to-noise ratio is a measurement of performance). The algorithm is de-activated based on the estimation. See col. 4, lines 18-57, col. 6, lines 18-67, and Figure 3.

6. **Claim 43** is rejected under 35 U.S.C. 102(e) as being anticipated by Kansakoski et al. (U.S. Patent No. 6,377,813).

Regarding **claim 43**, Kansakoski discloses a method for improving performances of a mobile radiocommunication system using a (closed loop) power control algorithm. The method comprises regularly estimating if a criterion is met as to whether the power control algorithm should better be de-activated. The criterion is mobile station "high" velocity. The method also comprises de-activating the power control algorithm if the criterion is met. A different type of algorithm (open loop) is performed when the algorithm is de-activated. See col. 8, lines 8-34, col. 11, line 41 through col. 12, line 20, Figure 4, and claim 1.

Claim Rejections - 35 USC § 103

7. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

8. **Claims 33, 36, and 37** are rejected under 35 U.S.C. 103(a) as being unpatentable over Vembu in view of well known prior art.

Regarding **claim 33**, Vembu discloses everything claimed as applied to **claim 31** above but Vembu fails to disclose that the estimated transmission quality is represented by an estimated signal-to-interference ratio. However, the Examiner takes Official Notice that it is conventional and well known in the art to determine the quality of a transmission based on the measured signal-to-interference ratio. It would have been

obvious to one of ordinary skill in the art at the time of the invention to modify Vembu's invention by representing the estimated transmission quality by an estimated signal-to-interference ratio because it is conventional and well known in the art to determine the quality of a transmission based on the measured signal-to-interference ratio.

Regarding **claims 36 and 37**, Vembu disclose everything claimed as applied to **claim 22** above, but Vembu fails to disclose whether the method is performed in the uplink or downlink transmission direction of the mobile radiocommunication system. However, the Examiner takes Official Notice that it is conventional and well known in the art to perform power control in both the uplink and downlink transmission directions of mobile radiocommunication systems. It would have been obvious to one of ordinary skill in the art at the time of the invention to perform Vembu's power control method in either the uplink or downlink transmission direction of the mobile radiocommunication system because it is conventional and well known in the art to perform power control in both directions.

Response to Arguments

9. Applicant's arguments filed on May 23, 2002 have been fully considered but they are not persuasive.

Applicant's argument that Vembu's SNR measurement is not an estimation is unpersuasive, because Webster's dictionary provides a broad definition of "estimate" as being "to judge" or "to conclude".

Allowable Subject Matter

10. **Claims 2-18, 21, and 25-27** are allowed.
11. **Claims 32 and 35** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
12. The following is a statement of reasons for the indication of allowable subject matter:

The present invention is directed to a method for improving the performance of a mobile radiocommunication system using a power control algorithm in which a determination as to whether the power control algorithm should be de-activated is made by estimating if a criterion is met. The estimation is based on an estimation of a deviation value representative of a deviation between an estimated transmission quality and a target transmission quality.

Claim 25 identifies the uniquely distinct feature "wherein said estimating step includes: an estimation of performance of said system with said power control algorithm de-activated".

Claims 26 and 32 identify the uniquely distinct feature "wherein said estimation as to whether said criterion is met includes: an estimation of a first deviation value, which would have been obtained if said power control algorithm had always been activated, on a given time-interval on which said deviation is estimated; an estimation of

a second deviation value, which would have been obtained if said power control algorithm had never been activated, on said given time-interval on which said deviation value is estimated; and a choice between activation and de-activation of said algorithm depending on which of said first and second deviation values is the lowest."

Claims 27 and 35 identify the uniquely distinct feature "wherein said estimated deviation value is represented by the variance of said estimated transmission quality."

The closest prior art, Vembu, discloses a method for improving the performance of a mobile radiocommunication system using a power control algorithm in which a determination as to whether the power control algorithm should be de-activated is made by estimating if a criterion is met, but fails to anticipate or render the above underlined limitations obvious.

Claim 21 is allowed for the reasons set forth in the Office Action mailed on March 12, 2002 (Paper No. 20).

Claims 2-18 are allowed because they depend on **claim 21**.

Conclusion

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ken Moore, whose telephone number is (703) 308-6042. The examiner can normally be reached on Monday-Friday from 8:30 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vivian Chin, can be reached at (703) 308-6739.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to:

(703) 872-9314 (for Technology Center 2600 only)


Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

Ken Moore

8/7/02

JKM


8/8/02

NGUYEN T. VO
PRIMARY EXAMINER